ATOMIC ENERGY newsletter®

A SERVICE FOR INDUSTRY BUSINESS ENGINEERING AND RESEARCH
ROBERT M. SHERMAN, EDITOR. PUBLISHED BI-WEEKLY BY ATOMIC ENERGY NEWS CO., 1000 SIXTH AVENUE, NEW YORK 18, N. Y.

May 9, 1961
Vol. 25...No. 7

Dear Sir:

Some twenty amendments to the Atomic Energy Act of 1954 and the EURATOM Cooperation Act of 1958 have been proposed by the USAEC and sent for Congressional action to the Joint Congressional Committee on Atomic Energy. They cover patent provisions; government liability in certain instances; claim settlement; sale or lease of plutonium under EURATOM agreements; etc. Full details may be obtained from JCAE, Senate Office Building, Wash. 25, D.C.

Beryllium Metals & Chemicals is new company jointly formed and owned by Lithium Corp. and The Alloyd Corp., Cambridge, Mass. Plant will be built by the new firm near Lithium Corp.'s chemical operation at Bessemer City, N.C., and is expected to be in operation by the late Summer of 1962. Lithium Corp. is majority stockholder in the new company which will engage in purification and production of beryllium metals and chemicals, and will conduct beryllium research. (Other BUSINESS NEWS, p.2 this LETTER.)

Largest single contract ever awarded U.S. company for production of nuclear fuel elements for test reactors has been awarded Sylcor division of Sylvania Electric Products, Inc. The contract, which calls for the production of more than 1000 elements and control rods, was awarded Sylvania by Phillips Petroleum Co.'s atomic energy division, which operates test reactors for the USAEC at the National Reactor Testing Station, Arco, Idaho. The agreement covers the supply of nuclear fuel elements for the engineering test reactor and the materials testing reactor at the station for a period of one year ending February, 1962. (Other PRODUCT NEWS, p.3 this LETTER.)

Bids have been asked by the USAEC's Idaho Falls, Idaho, operations office for new construction to expand the utilities system at the central facilities area of the National Reactor Testing Station, Arco, Idaho. The invitation, No. AT (10-1)-1089 calls for work to cost about $180,000 and requiring approximately 150 calendar days for completion. Bid deadline is May 17, 1961. (Other CONTRACT NEWS, p.4 this LETTER.)

Nuclear Corp. of America, with loss for 1960 of $628,977 on sales of $2,082,204 has operated in the black for the first quarter of 1961 according to David A. Thomas, board chairman. Drastic changes in product planning and corporate procedures were responsible for the better showing Mr. Thomas stated. Among unprofitable operations eliminated was the company's Isotopes Specialties division which had sustained continuous losses for the company in the past. (In July, 1960 debentures of Nuclear Corp. totaling $940,969 were acquired by Bear, Stearnes & Co., investment bankers of New York, and The Martin Co., Baltimore. Sam Norris, president, resigned January 1, 1961 and Mr. Thomas succeeded him in that office.)

Role of USAEC's national laboratories might be expanded to include work on such critical U.S. problems as desalting of water and weather control, Glenn T. Seaborg, USAEC chairman suggested in recent talk before American Physical Society in Washington. Alvin T. Weinberg, head of Oak Ridge National Laboratory, had made similar suggestion some months ago.

Copyright, Atomic Energy Newsletter. All rights reserved.

ATOMIC ENERGY FINANCIAL NEWS...

CHEMICAL FIRM TO OWN LARGE BLOCK OF NEW NUCLEAR ORGANIZATION: Under proposed formation of United Nuclear Corp., some 66% of ownership would go to Olin Mathieson Chemical Corp. Shareholders of Nuclear Development Corp. of America, who would exchange their stock on a share for share basis with the new concern, would own about 23% of United Nuclear. Mallinckrodt Chemical Works would own slightly over 10%. (Formation of United Nuclear, as reported here previously, brings together Nuclear Development, designer and builder of reactors; nuclear fuel fabricating facilities of Olin Mathieson; and the uranium metal and oxide production facilities of Mallinckrodt. Initial net worth of the business is estimated at $17,332,737. The new company would be capitalized initially at 912,188 shares of common stock and 96,091 shares of a 3½% convertible preferred stock. Distribution of that equity would be 94,075 shares of common and 13,784 shares of preferred to Mallinckrodt; 236,113 shares of common to Nuclear Development; and 582,000 shares of common and 82,307 shares of preferred to Olin Mathieson. On March 31, 1961 Nuclear Development's backlog of orders was $3,994,000. On Dec. 31, 1960 the nuclear divisions of Olin and Mallinckrodt had backlogs totaling $9,915,000.

STOCK DIVIDEND BY BERYLLIUM FIRM: Five per cent stock dividend has been voted by directors of Standard Beryllium Corp., in meeting held last fortnight. Decision to pay stock rather than cash was prompted by need to conserve cash to build one or possibly two mills at Boa Vista, Brazil, to contrate beryl ore. The company is currently negotiating for use of the Van Dornick flotation process with Beryllium Resources and Mr. Can Dornick, and officer of Beryllium Resources.

URANIUM PRODUCERS SHOW GOOD INCOME: Net profit of $3,328,000 or 74¢ per share was earned by Denison Mines, Elliot Lake uranium producer, during the first quarter of 1961. Operating profit for the period was $8,039,000 before write-offs, which amounted to $4,711,000. Dividends totaling $1 per share have been declared. They will be paid 50¢ a share May 15, 1961 and 50¢ a share Oct. 16. This will make a cash distribution of some $4,474,703 to approximately 17,000 shareholders.

Profit for the first quarter of 1961 for Bicroft Uranium Mines, Canadian uranium producer, was $734,875 before depreciation and write-offs. The company has in view ore reserves considered adequate to complete its existing two contracts with Eldorado Mining & Refining totaling $37,885,000, according to R. C. Bryce, president. Mr. Bryce noted that the company may obtain a further contract from Eldorado and with this in mind has explored and deepened its shaft to where it can obtain an additional 600,000 to 650,000 tons with uranium oxide content of 1,200,000-lbs. The company now has stockpile of 119,038-lbs of uranium oxide on hand.

ATOMIC ENERGY BUSINESS NEWS...

BERYLLIUM CAPACITY EXPANDED: Six million dollar expansion of Brush Beryllium's integrated plant at Elmore, Ohio which was started last year is now nearing completion. With additional furnace capacity, chemical process equipment and support units the company's output will be more than doubled raising it from 12,000-lbs. per month to over 30,000-lbs. The larger volume production has enabled better price schedules for customers, the company advises.

NUCLEAR WORK AT GOOD PACE IN JAPAN: Atomic energy work is progressing at a more rapid pace in Japan than in the U.S. according to Stanley Hellman, consultant to the Japan Atomic Energy Research Institute on the design of nuclear test facilities. Mr. Hellman has been working in Japan for Vitro International division of Vitro Corp. of America. He noted that a large number of projects are planned by the Institute and Vitro has been asked to submit several proposals on them. Mr. Hellman is preparing a report to the Institute covering all phases of both large scale water and gas in-pile test loops. Vitro's experience covers design work on such loops for the engineering test reactor and for the National Aeronautics and Space Administration.

DESERT SITE PLANNED FOR WASTE DISPOSAL: Nuclear Engineering Co., Pleasanton, Calif., has negotiated 99-year lease with State of Nevada for 80-acre desert site near Beatty where company will erect plant to decontaminate and package radioactive waste for ground burial. The company now disposes of such waste in the Pacific.

LICENSE NOTES: Reactor operating license of University of Wyoming was suspended when USAEC inspector found facility operating without licensed operator at controls.......Utilization facility license is to be issued by USAEC for 100 thermal kw campus reactor for University of Kansas, Manhattan, Kansas.

NEW PRODUCTS, PROCESSES, INSTRUMENTS...

NEW PRODUCTS: New "analytical" scaler, Model E-130, may be used with all types of counting systems, from basic GM counting to complex automatic sampling systems. Its high voltage supply allows wide range in addition to providing a fixed reference voltage for accurate reproducibility. Separate gain and discriminator controls facilitate precise integral spectrometry. --Radiation Equipment & Accessories Corp., Lynbrook, N.Y.

New zirconium-columbian alloy tubing is said to have higher oxidation resistance and greater high-temperature strength than reactor-grade columbium tubing. Applications are as fuel-element cladding and heat-exchange tubing in nuclear reactors. Available in stress-relieved, half and full hard-drawn forms, the seamless tubing is offered in sizes from 0.012 to 1.125-in. O.D. --Superior Tube Co., Norristown, Pa.

New series of low background beta counting systems offered by this manufacturer is designed to extend the range of detection sensitivity. The systems feature extremely low background, high efficiency and are available in either manual or automatic versions. --Tracerlab, Inc., Waltham, Mass.

PRODUCT NEWS: Cobalt-60 in quantities less than 100,000 curies will no longer be sold by Oak Ridge National Laboratory. Orders for 100,000 curies or more of cobalt-60, up to a specific activity of 30 curies per gram, will be handled by ORNL on a custom order basis where the customer is prepared to accept the material in a single shipment. This material is priced at $1 per curie. Decision of the USAEC to thus withdraw from routine production of cobalt-60 is based on capability of the test reactors of Westinghouse Electric Corp. and General Electric Co., which are now producing the radioisotope in quantities sufficient to meet ordinary demand.

Public comment has been asked by the USAEC within 60 days on the question of whether the licensing regulations (10CFR 30) should be amended to exempt automobile lock illuminators containing up to 15 mc of tritium; whether the exemption if granted should be extended to other luminous sources using the same material; and whether the total amount of tritium used for such purposes should be limited to 8 million curies per year, the amount produced by natural causes. Basically the general question involved is: whether the Commission should authorize the use of radioactive materials in consumer goods where control over the disposal of the radioactive materials cannot be exercised, even though the radiation dose to individuals may be extremely low compared with natural background radiation. (The proceeding was instituted by the Commission on petition of Bernard Heinz, Scranton, Pa., to exempt automobile lock illuminators. Luminous watches and clocks using tritium had been previously exempted, but the USAEC does not consider this a precedent for exempting other types of consumer goods.)

MANUFACTURERS' NEWS: Regulations of USAEC (10 CFR 25) have been amended to allow private industrial firms to work in classified areas of the gas centrifuge field and to retain the benefits of their work. Development of the gas centrifuge process to provide nuclear reactor fuel is underway in the U.S. and abroad; current work is a refinement of earlier developments which had been found uneconomic.

Nuclear products branch of Lockheed Aircraft Corp. has successfully underbid competitors and will supply nuclear reactor to Purdue University, W. Lafayette, Ind. The Purdue machine, which will cost less than $150,000 will be of the swimming pool type and will operate initially in the 500 to 1,000 watt range. This is the sixth reactor built by Lockheed, four being bought by universities. Purdue's nuclear engineering staff will use the reactor for student training.

Shipment of two beta gauges to Oy Control Corp., Helsinki, Finland has been made by Tracerlab, Inc., Waltham, Mass. The equipment will be incorporated into paperboard manufacturing machinery being fabricated by the Finnish firm for export to Russia.

Nuclear research reactor designed and built by American Machine & Foundry's atomics division and of 1,000 kw capacity was dedicated last fortnight in Portugal. The reactor is part of the facilities of the Junta de Energia Nuclear, which also includes a linear accelerator, Van de Graaff generator, radiation chemistry building and pilot plant for future uranium refining. Construction of the research center was started some 3½-years ago, and AMF built the reactor within 18 months.

MANUFACTURERS' LITERATURE: Technical brochure of Vitro Chemical Co. contains complete information on thorium, yttrium chemicals, metals and alloys of the rare earth group of elements. In addition to potential uses, the brochure describes detailed properties and chemical analyses of more than 50 products, several of which are now available for the first time on a commercial scale. The booklet may be obtained from the company at 342 Madison Ave., New York.

ATOMIC ENERGY CONTRACT NEWS...

BIDS ASKED: Cooperative and publicly-owned utility organizations were asked by the USAEC to submit by July 24, 1961 proposals for construction of a 50,000 net electrical kw organic-cooled nuclear power plant under the Commission's second round of its power demonstration reactor program. Specifically invited to present proposals are the Burlington Light Department, Burlington, Vt., and associated organizations; Dairyland Power Cooperative La Crosse, Wisc.; Grand River Dam Authority, Vinita, Okla; and Plains Electric Generation and Transmission Cooperative, Inc., Albuquerque, N.M. Of some nine utilities which expressed interest in the project in response to a USAEC invitation in December, 1960, the Commission considered the tentative proposals made by these particular organizations (as listed) as likely to produce an acceptable plan for construction of the plant. The other five utilities were advised why their proposals were not considered acceptable. However, they are not precluded from submitting new proposals, nor is any utility excluded. Under terms of this program, the utility provides the site and the conventional electrical generating facilities and the Commission the nuclear part of the plant. The site data submitted by the four utilities specifically invited to submit proposals already has been found to be acceptable by the Commission's advisory committee on reactor safeguards. (The project is one of four small or intermediate-size prototype plants in the 50-100 thousand electrical kw range the construction of which was authorized by Congress some two years ago. Private utilities were first sounded out on the organic prototype but showed no interest in it.)

CONTRACTS AWARDED: Contract in the value of $34,000 has been received by Tracerlab, Inc., Waltham, Mass., from General Services Administration, Washington, D.C., to supply nuclear calibrators to the Office of Civil and Defense Mobilization. The calibrators, or radiological source sets (CD-V-784), insure accurate readings on civil defense instruments for measuring radiation levels.....Under a $102,000 contract received from the USAEC's reactor research division Tracerlab will undertake research studies on gas cooled reactors. Particular objective of the studies is to remove radioactive contaminants from helium used as coolant medium in such reactors. (When the helium coolant stream is subject to intense ionization in the reactor core the radioactive contaminants, it is hypothethized, become electrically charged. It is further hypothesized that if the gas stream is then exposed to an electrostatic field the contaminants will converge and concentrate at a single point, in this case an orifice in the reactor body where they can be drawn off with a small amount of helium. First work will be feasibility studies involving the construction of apparatus to demonstrate the technique on a laboratory scale.)

Union Carbide Corp., under new contract awarded by USAEC, will deliver to the Commission through 1966 uranium concentrates valued at $100 million from mills operated by Union Carbide Nuclear Co. at Rifle and Uravan, Colo. Deliveries under the contract are to be made at the rate of 3 million pounds annually of which no more than 2.5 million pounds may be derived from company-controlled ores. Unit price to be paid by the Commission to April 1, 1962 is $8.41 per pound; thereafter it will be $8 per pound.

MEETINGS, COURSES, CONFERENCES...

MEETINGS: Second annual meeting of Institute for Nuclear Materials Management is scheduled for June 11-14. 1961 at Denver, Colo. The three day meeting is expected to attract some 250 participants. In conjunction with the meeting, the USAEC will hold its annual Materials Management meeting in Denver June 15-16. Full program may be obtained from the program chairman, H. L. Toy, Battelle Memorial Institute, Columbus 1, Ohio.

Summer meeting of Society of Automotive Engineers, June 5-9, 1961 at St. Louis, Mo., will hear two papers on radiotracer evaluation of railroad diesel engine wear. Full program may be obtained from SAE, 485 Lexington Ave., New York 17.

CONFERENCES: Some six major conferences are planned for the coming months by the UN's International Atomic Energy Agency. Symposium on effects of ionizing radiation on the nervous system is planned for June 5-9, 1961 in Vienna. Symposium on whole body counting is scheduled for June 13-16 in Vienna. Seminar on the physics of fast and intermediate reactors is planned for August 3-11 in Vienna. Seminar on plasma physics and controlled nuclear fusion research is scheduled for Sept. 4-8, in Salzburg, Austria. Symposium on utilization and programming of research reactors is planned for Oct. 16-20, in Vienna. Conference on use of radioisotopes in animal biology and the medical sciences is scheduled for Nov. 21-Dec. 1, in Mexico City.

ATOMIC ENERGY PATENT DIGEST...

PATENTS ISSUED April 25, 1961 to PRIVATE ORGANIZATIONS AND/OR INDIVIDUALS: (1) Reactor fuel plate assembly and method. Harry R. Brand, inventor. No. 2,981,669 assigned to Sylvania-Cornign Nuclear Corp. (2) Irradiation of olefins and mixtures thereof with alcohols. Charles E. Stoops, James M. Day, inventors. No. 2,981,670 assigned to Phillips Petroleum Co. (3) Nuclear fuel assembly locking joint and method. Ralph B. Johnson, inventor. No. 2,981,673 assigned to Sylvania-Cornign Nuclear Corp. (4) Process for retaining and extracting uranium contained in uraniferous solutions. Pierre Pagny, inventor. No. 2,981,593 assigned to Potasse et Engrais Chimiques, Paris, France.

PATENTS ISSUED April 25, 1961 to GOVERNMENTAL ORGANIZATIONS: (1) Method for recovering plutonium values from solution using a bismuth hydroxide carrier precipitate. Burt F. Faris, inventor. No. 2,981,591 assigned to USAEC. (2) Method and apparatus for calcining salt solutions. Stephen Lawroski, Albert A. Jonke, Rollin G. Taecker, inventors. No. 2,981,592 assigned to USAEC. (3) Process for descaling and decontaminating metals. Russell D. Baybarz, inventor. No. 2,981,643 assigned to USAEC. (4) Nuclear reactor fuel element. Walter E. Kingston, inventor. No. 2,981,672 assigned to USAEC.

PATENTS ISSUED May 2, 1961 to PRIVATE ORGANIZATIONS AND/OR INDIVIDUALS: (1) Reactor reactivity meter. Gerald Goertzel, inventor. No. 2,982,473 assigned to Nuclear Development Corp. of America, White Plains, N.Y. (2) Uranium milling. Fred T. Sherk, Robert A. Koble, inventors. No. 2,982,602 assigned to Phillips Petroleum Co. (3) Process for the manufacture of berlyyium. Jonas Kamlet, inventor; Edna Kamlet, executrix of Jonas Kamlet, deceased. No. 2,982,644 assigned to E. I. du Pont de Nemours & Co. (4) High unsaturation irradiated butyl rubber. Theodore Lemiszka, James E. Shewmaker, inventors. No. 2,982,706 assigned to Esso Research & Engineering Co. (5) Neutron detector. Price D. Wickersham, inventor. No. 2,982,855 assigned to Thompson Ramo Wooldridge, Inc., Los Angeles, Calif. (6) Atomic particle generating device. Wilmer A. Hoyer, Robert C. Rumble, inventors. No. 2,982,858 assigned to Jersey Production Research Co., Tulsa, Okla.

PATENTS ISSUED May 2, 1961 to GOVERNMENTAL ORGANIZATIONS: (1) Production of plutonium fluoride from bismuth phosphate precipitate containing plutonium values. Harrison S. Brown, Edward G. Bohlmann, inventors. No. 2,982,599 assigned to USAEC. (2) Separation of uranyl and ruthenium values by the tributyl phosphate extraction process. Archie S. Wilson, inventor. No. 2,982,601 assigned to USAEC. (3) Preparation of anhydrous cerium chloride, uranium bromide, or plutonium fluoride. Kent M. Harmon, Edward Wichers, inventors. No. 2,982,603 assigned to USAEC. (4) Prepation of neptunium hexafluoride. Glenn T. Seaborg, Harrison S. Brown, inventors. No. 2,982,604 assigned to USAEC. (5) Uranium decontamination with respect to zirconium. Seymour Vogler, Morris Beederman, inventors. No. 2,982,600 assigned to USAEC. (6) Pretreating uranium for metal plating. Ralph F. Wehrmann, inventor. No. 2,982,702 assigned to USAEC. (7) Fuel for neutronic reactors and process of making. Bernard M. Abraham, Howard E. Flotow, inventors. No. 2,982,708 assigned to USAEC. (8) Neutronic reactor design to reduce neutron loss. Francis T. Miles, inventor. No. 2,982,709 assigned to USAEC. (9) Food irradiation reactor. Carl F. Leyse, inventor. No. 2,982,710 assigned to USAEC. (10) System for unloading reactors. Alonzo C. Rand, Jr., inventor. No. 2,982,711 assigned to USAEC. (11) Merchant marine ship reactor. Melvin F. Sankovich, John F. Mumm, Donald C. North, Jr., Harvey R. Rock, Donald K. Getson, inventors. No. 2,982,713 assigned to USAEC. (12) Boiler superheater reactor. Thomas C. Heckman, inventor. No. 2,982,712 assigned to USAEC. (13) Cesium recovery. Theodore R. McKenzie, Wallace W. Schulz, inventors. No. 2,982,785 assigned to USAEC. (14) Method and apparatus for pulsing a charged particle beam. Kris Aaland, Robert W. Kuenning, Raymond K. Harmon, inventors. No. 2,982,917 assigned to USAEC. (15) Method for the alkalaine treatment of uranium ores by means of ion exchange resins. Pierre Mouret, Bernard Parly, Paul Pottier, inventors. No. 2,982,605 assigned to Commissariat a l'Energie Atomique, Paris, France.

Sincerely,

The Staff
ATOMIC ENERGY NEWSLETTER

May 9, 1961